

# S'COOL BREEZE



Student's Cloud Observations On-Line

Volume 3 , Issue 2

December 2002



Aqua Wins "Best of What's New Award!"

## Aqua's Remote Sensing Journey

by Stephen W. Dacey  
Resource Specialist

Aqua, NASA's latest Earth observing satellite, was successfully launched on May 4, 2002 at 2:55 a.m. PDT. As scheduled, the Aqua spacecraft successfully separated from the Delta rocket over Africa on its first orbit, about an hour after launch, and the solar array unfurled over Europe a few minutes later. The AMSR-E antenna was then deployed, followed several hours later by deployments of the two CERES instruments and the X-band antenna. Over the next few weeks the remaining deployments were made, all of the instruments were turned on, tests were conducted, and data began to be sent down to Earth.

By June 24, 2002 all six Aqua instruments were sending science data. Throughout the summer sample images from each of the instruments were released. All of the images formerly released in press releases, along with text explanations of what the data reveal, can be found on the Aqua Science website at <http://aqua.nasa.gov/newsroom.html>.

The ability to study diurnal changes (changes in conditions during a day) by comparing Aqua and Terra MODIS data was illustrated on July 6-8, 2002 when shifting winds blew smoke from forest fires raging in Quebec, Canada south over New England. People enjoying the Independence Day holiday thought their beach day was going to get rained out, but satellite imagery revealed that the "overcast" day was actually due to smoke drifting down from the Quebec fires. The morning overpass from Terra provided the MODIS image on page 2, and then an afternoon overpass by Aqua showed how the smoke had progressed.

Aqua has monitored many other key events such as Hurricanes Gustav, Isidore, Kyle, and Lilli in the Atlantic, fires in Oregon, New Guinea, and Africa, typhoons in the Pacific, flooding in France, Vietnam, and Cambodia, volcanoes such as Mount Etna in Sicily,

(Continued on page 2)

### Inside this issue:

Aqua's Remote Sensing ...	1
Quarter's Worth of Websites	1
Best of What's New Award	2
NASA STEMs	2
Teacher Corner	3
S'COOL Cloud Photo Contest	3
"And the Survey says..."	4

## Quarter's Worth of Websites

by Roberto Sepulveda

Some may speculate that the wonder of science in the classroom has been hampered by the recent emphasis on national & state standards. Others may speculate that there is too much emphasis on quantity rather than quality. I guess we could say we have a hung jury. Well there is an answer and it can be found at our 'fingertips.' We at S'COOL understand that teachers have a heavy workload and many times are unable to search for exciting activities or ideas to use in the classroom. In an effort to bring back the excitement for teachers and students alike, S'COOL will begin to highlight several websites with each quarterly newsletter.

The websites highlighted will cover all grade levels and touch upon many fields of science. Some will even offer free materials and posters for the asking. We hope that this added feature will offer a wealth of opportunities and materials for you and your students. We invite all of you to send comments about the highlighted websites along with suggestions for future highlights. To contact us please refer to the last page on this newsletter.

**Now on with the 'First' Quarter's Worth of Websites!**

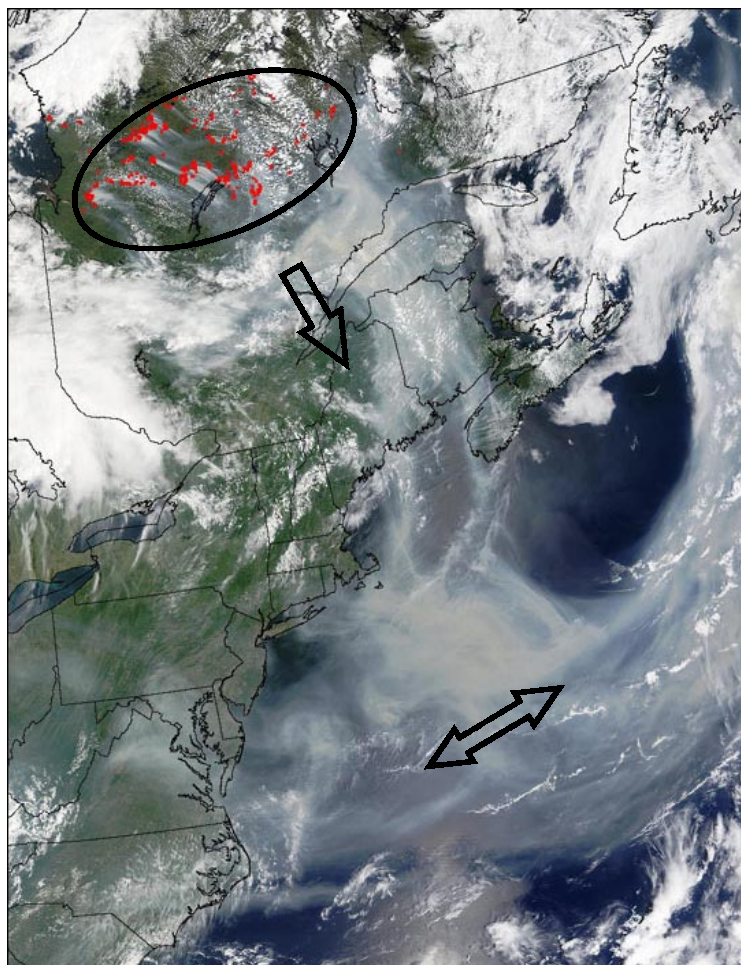
**The Space Place:** <http://spaceplace.nasa.gov>

The Space Place is one of NASA's Educational outreach programs that bring together fun and original projects and activities. Whether it's choosing the payload for a Mars mission or playing the Spinoff game to reveal hidden space pictures (a few of the many interactive activities

(Continued on page 3)



### Aqua's Remote Sensing Journey (continued from page 1)



Oval shows areas where wildfires were reported and arrows indicate direction smoke traveled.

clouds and their affect on incoming and outgoing radiation, sea ice coverage in the Arctic and Antarctic, and global sea surface temperatures. Samples of this Aqua imagery can be found on NASA's Visible Earth website (<http://visibleearth.nasa.gov>) by typing in the keyword "Aqua."

2002 has been a very rewarding year for the engineers who built Aqua and integrated its instruments, the engineers and scientists who built the Delta II launch vehicle and launched the rocket, and the science investigators who are working with Aqua data in their long-term research efforts. The construction, launch, and data collection of the Aqua satellite have also been exciting for teachers and students who are making the connection between the science and engineering of NASA and the concepts they are teaching and learning in school. NASA hopes to continue making this connection and we look forward to the participation of teachers and students as Aqua continues to make observations essential for understanding and protecting our home planet.

The best way to stay up to date on Aqua news and imagery is to log onto the Aqua Science website (<http://aqua.nasa.gov>). The top of the page provides a link to "Publications" for downloading instrument brochures, fact sheets, and even Power Point presentations about Aqua. The bottom of the page contains a link to "Cool Science" where users can learn about the science that Aqua is accomplishing through video clips of Aqua investigators, animations, satellite imagery, and pictures. All materials from Cool Science can be downloaded from <http://spidb.gsfc.nasa.gov>. Click on the "Webcast" icon, also at the bottom of the Aqua science page, to watch archives of past Aqua webcasts, and to prepare for the Aqua validation webcast, which is being planned to take place in spring 2003.

*Special thanks to C.L. Parkinson, Aqua Project Scientist, of NASA Goddard Space Flight Center for her guidance and helpful suggestions towards the writing of this article.*

### Best of What's New Award

NASA orbiters have captured three of Popular Science's "Best of What's New Award" for 2002. NASA's Aqua satellite mission is one of the winners. Aqua is not winning for shedding light on the mysteries of space but for offering a peek into intricate processes at home. It's quite simply one of the most advanced Earth-observing instruments ever. Partner to Terra (a winner in 2000), Aqua has been monitoring the global water cycle since May and will continue to track the flow of water through the oceans, across ice sheets, into the atmosphere and inside soil. We will keep you posted on more exciting news yet to come about our satellite's adventures. Popular Science will feature the 100 winners in it's December 2002 issue.

## NASA STEMS

NASA Science Trivia  
to Excite & Motivate Students

We're sure you know that the acronym, **NASA**, stands for **National Aeronautics and Space Administration**, but did you know that NASA got its start from a little agency known as **NACA** (National Advisory Committee on Aeronautics) back in 1958, after the Soviets launched Sputnik? NACA possessed some of the best engineering talent in the country at that time and the US needed to respond to the Soviet's successful launching of their space program. For more information visit: <http://centennialofflight.gov/> and select History of Flight: Essays and then select "Evolution of Technology"



available), children and adults of every age will be delighted as they learn about basic space and Earth science and technology concepts. This program is targeted to the elementary learner but you probably wouldn't be able to tell if you saw me at the computer! For a free Space Place calendar, materials and more information, please contact Nancy Leon at: [nancy.j.leon@jpl.nasa.gov](mailto:nancy.j.leon@jpl.nasa.gov) or call (818)354-1067



**Sci Jinks Weather Laboratory:** <http://scijinks.jpl.nasa.gov>

The Sci Jinks is another NASA educational outreach program targeting the middle school learner. Students will enjoy laughing as they help the computer make unpredictable weather stories or try to figure out some jokes from the 'bad weather joke machine.' In addition students will find great information and ideas for weather-related science projects and much more. To find out more information contact Nancy Leon at: [nancy.j.leon@jpl.nasa.gov](mailto:nancy.j.leon@jpl.nasa.gov) or call (818)354-1067



**NASA Name the Rovers Contest:** <http://www.lego.com/rovers/>

Be a part of history! The "Name the Rovers" Contest is a unique opportunity for U.S. school children in grades K-12 to name the two Mars Exploration Rovers that will land on Mars in January 2004. The winning students will become a part of space exploration history! The contest's mission is to get children excited about the wonder and adventure of exploring our solar system. Educators can use this as a learning tool to help teach their students about space exploration, or encourage them to engage in research on their own. Mythology, history, science and literature are all potential sources of inspiration in the classroom and beyond. PDF Entry form available on-line.



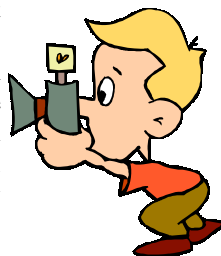
**American Geophysical Union Careers:** [www.agu.org/earthinspace/careers](http://www.agu.org/earthinspace/careers)

Have your students ever asked you what they could do with the science they are learning in class? Well now you have a heavyweight resource to 'sock it' to them. They will learn how studying rocks, water, air, space and life can lead to exciting careers as geoscientists. What do geoscientists do? Well, let them explore this site to find the answer to their question along with fascinating facts about science. For a great Earth & Space Scientists poster and more information contact Wynetta Singhateh at: [wsinghateh@agu.org](mailto:wsinghateh@agu.org) or call (202)777-7515



## S'COOL's First Cloud Photo Contest

S'COOL will host a cloud photo contest open to all of our participants starting January of 2003. The first cloud photo contest will highlight **Stratus** clouds. Each school may submit **one photo entry for each cloud level type (cirrostratus, altostratus & stratus)**, therefore we suggest that each school have it's own contest and select the best photo(s) to send to S'COOL. Scientists here at NASA will then choose from the photos submitted and 1st, 2nd and 3rd place winners will be announced on our website and in the March newsletter. Each of the winners will receive a special gift from NASA Langley Research Center. You may send us photos developed from any film type or send us a digital picture of your entry. We will accept photos beginning January 13th until the 31st of the month. Send your school's entry along with teacher's name, e-mail address, school name & address to S'COOL (address on back). Photos sent will become the property of NASA and will not be returned. Don't be surprised if some of your photos end up on our website gallery of clouds.



## Teacher Corner

Over 1400 participants are now registered thanks in part to an increased number of Foreign Language classroom registrations. **Keep spreading the word!**

**Have you changed your school information?** Please remember to notify us of any changes in your school information, e-mail address or anything you feel is important for our database.

**S'COOL's New Database** is now fully functional and working 'like a dream.' Thank you all for the patience shown while we introduced the new version. There will be more exciting news/ideas in the near future on how to use the new version in the classroom.

**Coming in 2003! The S'COOL KIDS Page**

The KIDS Page will promise to be an exciting place for S'COOL kids to find out more information about the CERES experiment and many other fascinating facts about NASA.

**Thank you for your continued participation!**

NASA Langley Research Center  
CERES S'COOL Project  
Mail Stop 927  
Hampton, VA 23681-2199



## ***Upcoming Events***

NSTA Southwestern Area Convention  
December 5-7, 2002  
Albuquerque, NM USA

American Geophysical Union Fall Meeting  
December 7-10, 2002  
San Francisco, CA USA

IOP—Intensive Observation Period  
January 13-17, 2003

<http://asd-www.larc.nasa.gov/SCOOL/visits.html>

For more information contact us by:  
NASA Langley Research Center  
S'COOL Project  
Mail Stop 927  
Hampton, VA 23681-2199  
Phone: (757) 864-5682  
FAX: (757) 864-7996  
E-mail: [scool@larc.nasa.gov](mailto:scool@larc.nasa.gov)  
<http://scool.larc.nasa.gov>  
Roberto Sepulveda, editor  
Dr. Lin Chambers, French translator  
Roberto Sepulveda, Spanish translator

## ***“And the S'COOL Survey 2002 Says...”***

I am a special education teacher and our use of S'COOL is not linked to a science class, or any specific class. We do it because it is FUN! The kids don't realize that they are learning - they think they are just getting out of class. We use it to help them learn the importance of following through with a schedule and being an integral part of a team. I also use the data in algebra classes and the science classes as appropriate. We are looking to create a science club this year and the S'COOL observations will be part of that club, therefore making all of our special needs students the knowledgeable leaders for that section of the club. Keep up the great work and service to classrooms around the world. Thanks for a learning opportunity that I never dreamed of.

Karen Campbell, Hancock County High School, Lewisport, Kentucky